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Ms. Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

6/2/2019

Re: Updating the Commission's Rule for Over-the-Air Reception Devices
(FCC WT Docket 19-71)

Dear Madam Secretary:

I would like to thank the Commission for looking at the need to modify the current O.T.A.R.D. rules to allow for the use of equipment and/or antennas to transmit or relay "Fixed Wireless" Internet service.

There is a vast public need, especially in the rural areas, for the use of small rooftops, or towers to bring internet service to those that can not currently get it, or can only get sub standard service. A lot of this can be caused by terrain that does not allow for conventional methods of distribution to be used.

There is also the cost factor of getting the service to the end customer. It costs a cellular, cable, telco, or satellite provider far more in investment in infrastructure to get their service to the end user, versus that of the standard "Fixed" Wireless Internet Service Provider (WISP) using both licensed and un-licensed microwave frequencies.

BACKGROUND

Starting in 1978, Interstate Wireless was originally a 2 way radio communications dealer, providing both equipment and mountain-top repeater services to Phoenix and rural Arizona.

We later migrated our services to provide Common Carrier Paging to a wide area of the State of Arizona. Providing service in many miles of rural terrain that other providers would not cover.

As the need for Paging technology disappeared, we sold off our tower sites, and were able to use our knowledge of communications to start a rural area fixed wireless internet service. We were able to find a good rural Arizona area location that desperately needed our services.

From our previous business sale, we had the money needed to allow us to construct and install our initial radio tower to use as a "Hub" location. In 2012, the County zoning authority wanted \$9800. to get a "Wireless Permit" for a new communications location. There was, and still is, no separate fee determination in the County permit for the vast differences between a major cellular tower site, or a small internet "relay" site.

In 2013, Az Airnet was born, and over the past years, we have grown steadily to provide good service to many in this rural area. We were able to bring sufficient internet bandwidth into our network, and with savings on using the newer radio technologies and getting good fiber competition at our main Internet connection, we were able to increase our speeds several times without increasing our costs to the end customer. When we started, our highest speed available was 3 Mbps (Download) to the customer. Now in 2019, we can provide the FCC standard of 25/3 to the end customer, with higher speeds available to businesses, and schools in the area.

EXPANSION

We still have many customers within our current service area that we need to provide service to. Many of these areas are restricted due to variations in terrain, and our current "Hub" locations do not have direct line of sight to service them.

We are also looking at other areas outside of our current service area that we would like to expand into.

Changing the OTARD rules would allow us to construct and install the needed infrastructure locations to go forward in providing service to these customers and areas.

SITE COSTS

Currently under the County "Planning and Zoning Ordinance" ¹, a "Wireless Permit" for a new site is \$3830.² (This does not include fees for County Building permits, or other items that the County requires to be done to obtain a "Wireless Permit")

OTARD listed equipment is exempt from the "Wireless Permit" requirement.

Since the County sees NO difference between a major cellular tower, or a small "Fixed wireless relay site", they have restricted (via high "permit fees"), a small business WISP operator from constructing and providing service to areas in the County.

Hypothetically, as a WISP operator, I could sign a "Lease" with a property owner, purchase and install several small radio/antennas on their roof, and provide good internet service to a small service area, all for under what the County currently demands for their "Wireless Permit" fee!

If the OTARD rules were changed to exempt "WISP equipment", it would allow us to legally proceed to contract with private or business property owners, construct a small relay site, and provide good Internet service into areas that we now do not cover, or we need to provide better coverage into due to current terrain obstructions.

WISP EQUIPMENT

¹ Yavapai County (Arizona), Planning and Zoning Ordinance, Wireless Permit, Section 605 (pg 192-203)
<http://www.yavapai.us/Portals/0/OrdinancesRegulations/Ordinance-Planning-Zoning.pdf>

² Yavapai County, Zoning Ordinance Fee Schedule, Wireless Use permits (pg 3)

There is a vast difference in WISP equipment versus Cellular equipment. WISP equipment is mostly “Unlicensed WiFi” equipment, with transmitter power restrictions between 30 and 36 Dbm EIRP. Cellular equipment is licensed for far more than that, something that you would not want directly radiating above your bedroom.

WiFi equipment radiation has been engineered to be around people. Most people already have WiFi equipment located in their house. Putting WiFi antennas on top of their roofs should not be any more detrimental than having WiFi equipment IN their house.

OTARD CHANGES

The current OTARD rules cover antennas for “Fixed wireless signals”, provided that:

- (1) That the antennas are small, (less than one meter in diameter or diagonal measurement)*
- (2) Property on which the antennas are located is within exclusive use or control of the user (if the user has an ownership or leasehold interest in the property)*
- (3) The antenna transmits and receives fixed wireless signals for the use of those who control the premises on/in which the antenna is located.*

Item 1:

Most of the existing WISP antennas comply with being under the 1 meter measurement requirement. The only basis for needing something larger than 1 meter, would be primarily in the rural areas, where a larger “Microwave Backhaul” dish could be required to get sufficient signal gains to bring bandwidth in from a source that is far distant from the current site. If backhaul using “licensed” bands such as 6, 11, or 18 ghz (part 101) were used, and the distances between sites was large, there would be a requirement for dishes of 3,4 or 6 feet in diameter. (Although most home owners would not want something that large on top of their house).

OTARD rules do NOT specify regarding the “quantity” of Internet antennas that can be mounted on the property. Under the current OTARD rules, several sector antennas and a backhaul dish would be covered.

Item 2:

In almost all cases, a WISP would execute a “Legal Lease” with the property owner to construct and install WISP equipment on the premises, unless the WISP itself owned the property. (This is standard business practice).

Item 3:

A WISP would comply with this item, IF it had a “lease” with the property owner or owned the property. If a WISP had a lease for the property, it would legally be considered the “Customer” for any Fixed wireless device that brought internet INTO that location.

As far as changing the OTARD rules to allow the use of a “Hub” or “Relay” use. Dropping the word “Customer” from the original OTARD description would go a long way in allowing the installation of specific radio/antennas to provide the re-transmission of the Internet at that location. OTARD would then cover ALL radio/antennas used for “Fixed Wireless” use, regardless of whether they were used for bringing bandwidth into the site, or sending bandwidth out of the site to somewhere else.

IF THE FCC UPDATES THE OTARD RULES

If OTARD is changed to allow the “Transmission or Re-transmission” of internet service FROM a site, I believe the following will happen within the WISP industry:

1. WISP’s will immediately look at their current service areas, see where they can establish and use “relay” sites to improve their current coverage.
2. WISP’s will immediately look at areas that they do not currently serve, and will contact property owners to construct and install new sites to bring Internet service into new areas.
3. Customers will begin to benefit with additional competition in the area, both with pricing and speeds.

I again would like to thank the FCC Commissioners, and their staff for looking at updating the OTARD rules to bring them in line with current technologies, and helping WISP's to provide end users better service.

A handwritten signature in black ink, appearing to be 'Wayne Markis', with a long horizontal stroke extending to the right.

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